

USSN 10/738,413

EXHIBIT 4

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siRNA Target Finder

1. Paste your mRNA sequence (5' to 3'): (Please ensure that sequence contains no numbers.)

```
tattgagttcttcaaacattgtagcctctttatggctctgagaataactaccttaaac  
ccataatcttaatacttcttaaacctttcttaaaagagaagctctattcctgacactac  
ctctcatttgcaaggccaatcatcattgttttgtagtctattaaactgggttgcttag  
gtcaggcattattactaaacctattgttaattctaaacctaaagaattaactatt  
aatgggtaattagagttttcactttaacataggcctctccactgggtggatcagagcca
```

2. End my siRNAs with:

☒ TT ☐ UU

3. G/C content maximum (optional):

50%

4. Sequence constraints to avoid:

- ☐ 4 or more A's or T's in a row (recommended for vectors with pol III promoter)
- ☐ 4 or more G's or C's in a row (recommended for chemically synthesized siRNA)

Target sequence 1: AAACATTGTAGCCTCTTATG

[Blast search](#) (in new window)

Position in gene sequence: 14

GC content: 33.3%

Sense strand siRNA: ACAUUGUAGCCUCUUUAUGtt

Antisense strand siRNA: CAUAAAGAGGCUACAAUGtt

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Target sequence 2: AAATAACTACCTTAAACCCAT

[Blast search](#) (in new window)

Position in gene sequence: 44

GC content: 28.6%

Sense strand siRNA: AUAACUACCUUAAACCCAUtt

Antisense strand siRNA: AUGGGUUUAAAGUAGUUUtt

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Target sequence 3: AACTACCTTAAACCCATAATC

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Position in gene sequence: 48

GC content: 33.3%

Sense strand siRNA: CUACCUUAAACCCUAAUUCtt

Antisense strand siRNA: GAUUAUGGGUUAAGGUAGtt

View siRNA details**View** corresponding *Silencer*® siRNA Construction Kit Templates**View** corresponding insert sequences for an siRNA expression vector (e.g., *pSilencer*[™])**Target sequence 4:** AAACCCATAATCTTTAATACT**Blast search** (in new window)

Position in gene sequence: 57

GC content: 23.8%

Sense strand siRNA: ACCCAUAAUCUUUAAUACUtt

Antisense strand siRNA: AGUUAUAAAGAUUAUGGGUtt

View siRNA details**View** corresponding *Silencer*® siRNA Construction Kit Templates**View** corresponding insert sequences for an siRNA expression vector (e.g., *pSilencer*[™])**Target sequence 5:** AATCTTTAATACTTCTAAAC**Blast search** (in new window)

Position in gene sequence: 65

GC content: 23.8%

Sense strand siRNA: UCUUUAUACUUCUAAACtt

Antisense strand siRNA: GUUUAGGAAGUUAUAAAGatt

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Position in gene sequence: 72

GC content: 23.8%

Sense strand siRNA: UACUUCUAAACUUUCUUAtt

Antisense strand siRNA: UAAGAAAGUUUAGGAAGUatt

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Position in gene sequence: 82

GC content: 23.8%

Sense strand siRNA: ACUUUCUUAUUAAGAGAAGtt

Antisense strand siRNA: CUUCUCUUAUUAAGAAAGUtt

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Position in gene sequence: 92

GC content: 33.3%

Sense strand siRNA: UAAGAGAAGCUCUAUUCUtt

Antisense strand siRNA: AGGAAUAGAGCUUCUCUUAtt

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Position in gene sequence: 95

GC content: 42.9%

Sense strand siRNA: GAGAAGCUCUAUUCUGACtt

Antisense strand siRNA: GUCAGGAUAGAGCUUCUctt

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Position in gene sequence: 100

GC content: 42.9%

Sense strand siRNA: GCUCUAUUCUGACACUACtt

Antisense strand siRNA: GUAGUGUCAGGAUAGAGCtt

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Position in gene sequence: 132

GC content: 28.6%

Sense strand siRNA: GGUCAAUAUCAUUAUUtt

Antisense strand siRNA: AACUAAUGAUGAUUUGACtt

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Position in gene sequence: 130

GC content: 23.8%

Sense strand siRNA: AUCAUCAUUAUUUUGUAGtt

Antisense strand siRNA: CUACAAAACUAAUGAUGAUtt

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Position in gene sequence: 165

GC content: 47.6%

Sense strand siRNA: CUGGGUUUGCUUAGGUCAGtt

Antisense strand siRNA: CUGACCUAAGCAAACCCAGtt

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Target sequence 14: AACCTTATGTGTAATATTCTA

Blast search (in new window)

Position in gene sequence: 200

GC content: 19%

Sense strand siRNA: CCUUAUUGUUAUUAUUCUAtt

Antisense strand siRNA: UAGAAUAUUAACAUAAGGtt

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Target sequence 15: AATATTCTAACCATAGAATT

Blast search (in new window)

Position in gene sequence: 212

GC content: 19%

Sense strand siRNA: UAUUCUACCAUAAGAAUtt

Antisense strand siRNA: AAUUCUUAUGGUAGAAUAtt

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Target sequence 16: AACCATAGAATTAACTATT

Blast search (in new window)

Position in gene sequence: 220

GC content: 19%

Sense strand siRNA: CCAUAAGAAUUAACUAAUtt

Antisense strand siRNA: AAUAGUUAAUUCUUAUGGtt

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Target sequence 17: AAGAATTAACTATTATGGT

Blast search (in new window)

Position in gene sequence: 226

GC content: 19%

Sense strand siRNA: GAUUAAACUUAUUAUGGtt

Antisense strand siRNA: ACCAUAAUAGUUAUUAUtt

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Target sequence 18: AATTAACATTATATGGTGAA

Blast search (in new window)

Position in gene sequence: 229

GC content: 19%

Sense strand siRNA: UUAACUUAUUAUUGGUGAAtt

Antisense strand siRNA: UUCACCAUUAUAGUUAUtt

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Target sequence 19: AAATATTATGGTGAATAGA

Blast search (in new window)

Position in gene sequence: 233

GC content: 23.8%

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Sense strand siRNA: ACUAAUAAUGGUGAAUAGatt

Antisense strand siRNA: UCUAAUCCACCAUAAUAGUtt

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Target sequence 20: AATGGTGAATAGAGTTTTCAT

[Blast search](#) (in new window)

Position in gene sequence: 241

GC content: 28.6%

Sense strand siRNA: UGGUGAAUAGAGUUUUUCatt

Antisense strand siRNA: UGAAAACUCUAAUUCACCatt

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Target sequence 21: AATAGAGTTTTCACTTTAAC

[Blast search](#) (in new window)

Position in gene sequence: 248

GC content: 23.8%

Sense strand siRNA: UAGAGUUUUUCACUUUAACtt

Antisense strand siRNA: GUUAAAGUGAAAACUCUatt

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Target sequence 23: AATTCGAAAGAAAAGTCAGTC

[Blast search](#) (in new window)

Position in gene sequence: 300

GC content: 33.3%

Sense strand siRNA: UUCGAAAGAAAAGUCAGUCtt

Antisense strand siRNA: GACUGACUUUUCUUUCGAatt

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Target sequence 24: AAAGAAAAGTCAGTCATGTGC

[Blast search](#) (in new window)

Position in gene sequence: 305

GC content: 35.1%

Sense strand siRNA: AGAAAAGUCAGUCAUGUGCtt

Antisense strand siRNA: GCACAUGACUGACUUUUCUtt

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Target sequence 25: AAAAGTCAGTCATGTGCTTT

[Blast search](#) (in new window)

Position in gene sequence: 310

GC content: 33.3%

Sense strand siRNA: AAGUCAGUCAUGUCUUUtt

Antisense strand siRNA: AAAAGCACAUGACUGACUtt

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Target sequence 26: AAGTCAGTCATGTGCTTTCA

Blast search (in new window)

Position in gene sequence: 312

GC content: 38.1%

Sense strand siRNA: GUCAGUCAUGUCUUUUCatt

Antisense strand siRNA: UGAAAAGCACAUAGACUGACtt

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Target sequence 27: AAGCTTAAGATAAAGACTAA

Blast search (in new window)

Position in gene sequence: 340

GC content: 23.8%

Sense strand siRNA: AGCUUAGAUAAAGACUAAtt

Antisense strand siRNA: UUAGUCUUUUAUCUUAAGCUtt

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Target sequence 28: AAGATAAAGACTAAAAGTGT

Blast search (in new window)

Position in gene sequence: 347

GC content: 23.6%

Sense strand siRNA: GAUAAAGACUAAAAGUGUUt

Antisense strand siRNA: AACACUUUAGUCUUUAUc

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Target sequence 29: AAAGACTAAAAGTGTGTGATG

Blast search (in new window)

Position in gene sequence: 352

GC content: 28.6%

Sense strand siRNA: AGACUAAAAGUGUUUGAUGtt

Antisense strand siRNA: CAUCAACACUUUAGUCUtt

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Target sequence 30: AAAAGTGTGTGATGCTGGAGG

Blast search (in new window)

Position in gene sequence: 359

GC content: 42.9%

Sense strand siRNA: AAGUGUUUGAUGCUGGAGGtt

Antisense strand siRNA: CCUCCAGCAUCAAACACUtt

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Target sequence 31: AAGTGTGTGATGCTGGAGGTG

Blast search (in new window)

Position in gene sequence: 361

GC content: 47.6%

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Sense strand siRNA: GUGUUUGAUGCUGGAGGUGtt

Antisense strand siRNA: CACCUCCAGCAUCAACACtt

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Target sequence 32: AAGACATGTGATAATCACTGT

Blast search (in new window)

Position in gene sequence: 408

GC content: 33.3%

Sense strand siRNA: GACAUGUGAAUACACUGtt

Antisense strand siRNA: ACAGUGAUUAUCACAUGCtt

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Target sequence 33: AATCACTGTAGTAGCTGTGG

Blast search (in new window)

Position in gene sequence: 420

GC content: 42.9%

Sense strand siRNA: UCACUGUAGUAGACUGGtt

Antisense strand siRNA: CCAGCUACUACUACAGUGatt

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Target sequence 34: AAAGAGAAATCTGTACTCCA

Blast search (in new window)

Position in gene sequence: 441

GC content: 38.1%

Sense strand siRNA: AGAGAAUUCUGAGUCCAtt

Antisense strand siRNA: UGGAGUCACAGAUUUCUCtt

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Target sequence 35: AAATCTGTACTCCAATTAGC

Blast search (in new window)

Position in gene sequence: 447

GC content: 38.1%

Sense strand siRNA: AUCUGUGACUCCAAUUGCtt

Antisense strand siRNA: GCUAAUUGGAGUCACAGAtt

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Target sequence 36: AATTAGCCAGTTCCTGCAGAC

Blast search (in new window)

Position in gene sequence: 461

GC content: 47.6%

Sense strand siRNA: UUAGCCAGUCCUGCAGACtt

Antisense strand siRNA: GUCUGCAGGAACUGGCUAAtt

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Target sequence 37: AAGAATGCTCCTGGCTGTTTT**Blast search** (in new window)

Position in gene sequence: 499

GC content: 42.9%

Sense strand siRNA: GAAUGCUCCUGGCUGUUUUt

Antisense strand siRNA: AAAACAGCCAGGAGCAUUCtt

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Position in gene sequence: 502

GC content: 42.9%

Sense strand siRNA: UGCUCUGGCUGUUUUGUAtt

Antisense strand siRNA: UACAAACAGCCAGGAGCAIt

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Position in gene sequence: 584

GC content: 42.9%

Sense strand siRNA: GAACCUGAUGGAGAAGGAIt

Antisense strand siRNA: UUCCUUCUCCAUCAGGUUCtt

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Position in gene sequence: 587

GC content: 47.6%

Sense strand siRNA: CCUGAUGGAGAAGGAUUGCIt

Antisense strand siRNA: GCAUUCUUCUCCAUCAGGt

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Position in gene sequence: 671

GC content: 38.1%

Sense strand siRNA: UAUCCUUCUGUCCAAUGCAIt

Antisense strand siRNA: UGCAUUGGACAGAAGGAUAtt

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Position in gene sequence: 782

GC content: 38.1%

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Sense strand siRNA: CUUCAUGGGGAUUCACUGUtt

Antisense strand siRNA: ACAGUUGAAUCCCAUGAAGtt

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Target sequence 48: AACTGTGGAACTGCAAGTTT

Blast search (in new window)

Position in gene sequence: 797

GC content: 38.1%

Sense strand siRNA: CUGUGGAAACUGCAAGUUUtt

Antisense strand siRNA: AAACUUGCAGUUUCCACAGtt

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Target sequence 49: AAACGCAAGTTTGGCTTTTG

Blast search (in new window)

Position in gene sequence: 805

GC content: 38.1%

Sense strand siRNA: ACUGCAAGUUUGGCUUUUtt

Antisense strand siRNA: CAAAAGCCAAACUUGCAGtt

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Target sequence 50: AAGTTTGGCTTTTGGGGACCA

Blast search (in new window)

Position in gene sequence: 812

GC content: 47.6%

Sense strand siRNA: GUUUGGCUUUUGGGGACCAtt

Antisense strand siRNA: UGGUCCCCAAAGCCAAACtt

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Target sequence 51: AAACGCAAGAGAGACGACT

Blast search (in new window)

Position in gene sequence: 832

GC content: 47.6%

Sense strand siRNA: ACUGCAGAGAGACGACUtt

Antisense strand siRNA: AGUCGUCUCUCUGGAGUtt

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Target sequence 52: AAGAAACATCTCGATTGAG

Blast search (in new window)

Position in gene sequence: 862

GC content: 33.3%

Sense strand siRNA: GAAACAUCUUCGAUUUGAGtt

Antisense strand siRNA: CUCAAAUCGAAGAUGUUUtt

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Target sequence 53: AACATCTTCGATTTGAGTGC

Blast search (in new window)

Position in gene sequence: 865

GC content: 38.1%

Sense strand siRNA: ACAUCUUCGAUUUGAGUGCtt

Antisense strand siRNA: GCACUCAAUCCGAAGAUGUtt

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Target sequence 54: AAGGACAAATTTTGGCTAC

Blast search (in new window)

Position in gene sequence: 893

GC content: 33.3%

Sense strand siRNA: GGACAAUUUUUUGCCUACtt

Antisense strand siRNA: GUAGGCCAAAAUUUGUCtt

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Target sequence 55: AAATTTTTTGCCTACCTCACT

Blast search (in new window)

Position in gene sequence: 899

GC content: 33.3%

Sense strand siRNA: AUUUUUUGCCUACCUCACtt

Antisense strand siRNA: AGUGAGGUAGGCCAAAAUtt

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Target sequence 56: AAAGCATACCATCAGCTCAGA

Blast search (in new window)

Position in gene sequence: 925

GC content: 42.9%

Sense strand siRNA: AGCAUACCAUCAGCUCAGatt

Antisense strand siRNA: UCUGAGCUGAUGGUAUGCtt

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Target sequence 57: AAATGAAAATGGATCAACAC

Blast search (in new window)

Position in gene sequence: 975

GC content: 28.6%

Sense strand siRNA: AUGAAAAUGGAUACAACtt

Antisense strand siRNA: GUGUUGAUCCAUUUUUCatt

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Target sequence 58: AAAATGGATCAACACCCATG

Blast search (in new window)

Position in gene sequence: 980

GC content: 38.1%

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Sense strand siRNA: AAAUGGAUCAACACCAUGtt

Antisense strand siRNA: CAUGGGUGUUGAUCCAUUtt

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Target sequence 59: AAATGGATCAACACCATGTT

Blast search (in new window)

Position in gene sequence: 982

GC content: 38.1%

Sense strand siRNA: AUGGAUCAACACCAUGUUtt

Antisense strand siRNA: AACAUGGGUGUUGAUCCAUtt

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Target sequence 60: AACACCATGTTTAACGACAT

Blast search (in new window)

Position in gene sequence: 991

GC content: 38.1%

Sense strand siRNA: CACCAUGUUUAAACGACAUtt

Antisense strand siRNA: AUGUGUUAAACAUGGGUGtt

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Target sequence 61: AACGACATCAATATTATGAC

Blast search (in new window)

Position in gene sequence: 1004

GC content: 28.6%

Sense strand siRNA: CGACAUCAAUUUUUGACtt

Antisense strand siRNA: GUCAUAAAUUUGAUGUGCtt

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Target sequence 62: AATATTATGACCTCTTTC

Blast search (in new window)

Position in gene sequence: 1013

GC content: 28.6%

Sense strand siRNA: UAUUUUGACCUCUUUGUCtt

Antisense strand siRNA: GACAAAGAGGUCAUAAAUtt

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Target sequence 64: AAATCTGGAGACATTGATT

Blast search (in new window)

Position in gene sequence: 1080

GC content: 33.3%

Sense strand siRNA: AUCUGGAGAGACAUUGAUtt

Antisense strand siRNA: AAUCAUGUCUCCAGAUtt

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Target sequence 65: AAGCACCAGCTTTCTGCCTT

Blast search (in new window)

Position in gene sequence: 1110

GC content: 47.6%

Sense strand siRNA: GCACCAGCUUUUCUGCCUtt

Antisense strand siRNA: AAGGCAGAAAAGCUGGUGCtt

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Target sequence 66: AACAAAGAAATCCAGAAGCTGA

Blast search (in new window)

Position in gene sequence: 1158

GC content: 39.1%

Sense strand siRNA: CAAGAAAUCCAGAAGCUGAtt

Antisense strand siRNA: UCAGCUUCUGGAUUUCUUGtt

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Target sequence 67: AAGAAATCCAGAAGCTGACAG

Blast search (in new window)

Position in gene sequence: 1161

GC content: 42.9%

Sense strand siRNA: GAAAUCCAGAAGCUGACAGtt

Antisense strand siRNA: CUGUCAGCUUCUGAUUUCtt

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Target sequence 68: AAATCCAGAAGCTGACAGGAG

Blast search (in new window)

Position in gene sequence: 1164

GC content: 47.6%

Sense strand siRNA: AUCCAGAAGCUGACAGGAGtt

Antisense strand siRNA: CUCCUGUCAGCUUCUGGAUtt

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Target sequence 69: AAGCTGACAGGAGATGAAAAC

Blast search (in new window)

Position in gene sequence: 1172

GC content: 42.9%

Sense strand siRNA: GCUGACAGGAGAUGAAAACtt

Antisense strand siRNA: GUUUUCAUCUCCUGUCAGCtt

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Target sequence 70: AAAACTTCACATATTCATATT

Blast search (in new window)

Position in gene sequence: 1188

GC content: 23.8%

USSN 10/738,413

EXHIBIT 4

Sense strand siRNA: AACUUCACUAUUCUUAUUUtt

Antisense strand siRNA: AAUAUGGAAUAGUGAAGUtt

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Position in gene sequence: 1190

GC content: 33.3%

Sense strand siRNA: CUUCACUAUUCUUAUUGGtt

Antisense strand siRNA: CCAUAUGGAAUAGUGAAGtt

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Position in gene sequence: 1227

GC content: 38.1%

Sense strand siRNA: AAGUGUGACAUUUGCACAGtt

Antisense strand siRNA: CUGUGCAAUUGUCACACUtt

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Position in gene sequence: 1229

GC content: 38.1%

Sense strand siRNA: GUGUGACAUUUGCACAGAUtt

Antisense strand siRNA: AUCUGUGCAAUUGUCACACTt

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Position in gene sequence: 1276

GC content: 42.9%

Sense strand siRNA: AUCCUAAACUUAUCAGCCctt

Antisense strand siRNA: GGGCUGAGUAAGUUAGGAUtt

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Position in gene sequence: 1283

GC content: 47.6%

Sense strand siRNA: CUUACUCAGCCCAGCAUCtt

Antisense strand siRNA: UGAUGCUGGGCUGAGUAAgtt

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Target sequence 76: AACAGCCATCAGTCTTTATGC

Blast search (in new window)

Position in gene sequence: 1349

GC content: 42.9%

Sense strand siRNA: CAGCCAUAGUCUUUAUGCtt

Antisense strand siRNA: GCAUAAAGACUGAUGGCUGtt

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Target sequence 79: AATCCTGGAAACCATGACAAA

Blast search (in new window)

Position in gene sequence: 1400

GC content: 38.1%

Sense strand siRNA: UCCUGGAAACCAUGACAAAtt

Antisense strand siRNA: UUUGUCAUGGUUUCAGGAtt

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Target sequence 80: AAACCATGACAAATCCAGAAC

Blast search (in new window)

Position in gene sequence: 1408

GC content: 38.1%

Sense strand siRNA: ACCAUGACAAAUCCAGAACTt

Antisense strand siRNA: GUUCUGGAUUUGUCAUGGtt

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Target sequence 84: AATTTTGCCTGAGTTGACCC

Blast search (in new window)

Position in gene sequence: 1458

GC content: 42.9%

Sense strand siRNA: UUUUGCCUGAGUUUGACCCtt

Antisense strand siRNA: GGGUCAAAACUCAGGCAAAAtt

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Target sequence 85: AATATGAATCTGGTTCCATGG

Blast search (in new window)

Position in gene sequence: 1479

GC content: 38.1%

Sense strand siRNA: UAUGAUUCUGGUUCCAUGGtt

Antisense strand siRNA: CCAUGGAACCAUAUUAUatt

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Target sequence 86: AATCTGGTTCCATGGATAAG

Blast search (in new window)

Position in gene sequence: 1485

GC content: 38.1%

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EXHIBIT 4

Sense strand siRNA: UCUGGUUCCAUGGAUAAAGtt

Antisense strand siRNA: CUUUAUCCAUGGAACCAGAtt

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Target sequence 87: AAGCTGCCAATTCAGCTTT

[Blast search](#) (in new window)

Position in gene sequence: 1502

GC content: 38.1%

Sense strand siRNA: AGCUGCCAAUUUCAGCUUtt

Antisense strand siRNA: AAGCUGAAAUUGGCAGCAtt

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Target sequence 88: AATTCAGCTTTAGAAATACA

[Blast search](#) (in new window)

Position in gene sequence: 1511

GC content: 23.8%

Sense strand siRNA: UUUACAGCUUUAGAAUACAtt

Antisense strand siRNA: UGUUUUUCUAAAGCUGAAAtt

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Target sequence 89: AAATACACTGGAAGATTGCG

[Blast search](#) (in new window)

Position in gene sequence: 1525

GC content: 38.1%

Sense strand siRNA: AUACACUGGAAGGAUUUGCtt

Antisense strand siRNA: GCAAUCCUCCAGUGUAUtt

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Target sequence 90: AAGGATTGCTAGTCCACTTA

[Blast search](#) (in new window)

Position in gene sequence: 1536

GC content: 38.1%

Sense strand siRNA: GGAUUUGCUAGUCCACUAtt

Antisense strand siRNA: UAAGUGGACUAGCAAUCCtt

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Target sequence 91: AAAGCAGCATGCACAATGCCT

[Blast search](#) (in new window)

Position in gene sequence: 1578

GC content: 47.6%

Sense strand siRNA: AGCAGCAUGCACAAUGCCUtt

Antisense strand siRNA: AGGCAUUGUGCAUGCUGCtt

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Target sequence 92: AATGCCTTGCACATCTATATG

Blast search (in new window)

Position in gene sequence: 1592

GC content: 38.1%

Sense strand siRNA: UGCCUUGCACAUUAUAGtt

Antisense strand siRNA: CAUAUAGAUGUGCAAGGCatt

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Target sequence 93: AATGGAACAATGTCCCAGGTA

Blast search (in new window)

Position in gene sequence: 1613

GC content: 42.9%

Sense strand siRNA: UGGAACAAUGUCCAGGUAtt

Antisense strand siRNA: UACCUGGGACAUUGUUCAtt

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Target sequence 96: AACGATCCTATCTTCTTCTT

Blast search (in new window)

Position in gene sequence: 1646

GC content: 38.1%

Sense strand siRNA: CGAUCCUACUUCUUCUUt

Antisense strand siRNA: AAGAAGGAAGAUAGGAUCGtt

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Target sequence 98: AAGAAGTTTATCCAGAAGCCA

Blast search (in new window)

Position in gene sequence: 1725

GC content: 38.1%

Sense strand siRNA: GAAGUUUAUCCAGAAGCCAtt

Antisense strand siRNA: UGGCUUCUGGAUAAACUUCtt

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Target sequence 99: AAGTTTATCCAGAAGCCAATG

Blast search (in new window)

Position in gene sequence: 1728

GC content: 38.1%

Sense strand siRNA: GUUUUAUCCAGAAGCCAAUGtt

Antisense strand siRNA: CAUUGGCUUCUGGAUAAACtt

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Target sequence 101: AATGACCCATTGGACATAAC

Blast search (in new window)

Position in gene sequence: 1745

GC content: 42.9%

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Sense strand siRNA: UGCACCAUUGGACAUAACT

Antisense strand siRNA: GUUAUGUCCAAUGGGUGCAtt

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Target sequence 102: AACCGGAATCCTACATGGTT

Blast search (in new window)

Position in gene sequence: 1763

GC content: 47.6%

Sense strand siRNA: CCGGGAUCCUACAUGGUUtt

Antisense strand siRNA: AACCAUGUAGGAUCCCGGtt

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Target sequence 103: AATCCTACATGGTTCCTTTA

Blast search (in new window)

Position in gene sequence: 1770

GC content: 33.3%

Sense strand siRNA: UCCUACAUGGUUCCUUUUAtt

Antisense strand siRNA: UAAAAGGAACCAUGUAGGAtt

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Target sequence 104: AAATGGTGATTCCTTATTTC

Blast search (in new window)

Position in gene sequence: 1804

GC content: 23.8%

Sense strand siRNA: AUGGUGAUUUCUUUUUUCtt

Antisense strand siRNA: GAAAUAAAGAAUCCCAUtt

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Target sequence 105: AAGATCTGGGCTATGACTAT

Blast search (in new window)

Position in gene sequence: 1829

GC content: 38.1%

Sense strand siRNA: AGAUCUGGGCUAUGACUAtt

Antisense strand siRNA: AUAGUCAUAGCCCAGACUtt

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Target sequence 106: AAGATTCAGACCCAGACTCTT

Blast search (in new window)

Position in gene sequence: 1860

GC content: 42.9%

Sense strand siRNA: GAUUCAGACCCAGACU CUtt

Antisense strand siRNA: AAGAGUCUGGGUCUGAAUtt

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USSN 10/738,413

EXHIBIT 4

Target sequence 107: AAGACTACATTAAGTCCTATT

Blast search (in new window)

Position in gene sequence: 1884

GC content: 28.6%

Sense strand siRNA: GACUACAUUAAGUCCUAUUt

Antisense strand siRNA: AAUAGGACUUAUUGUAGUCtt

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Target sequence 108: AAGTCCTATTGGAAACAAGCG

Blast search (in new window)

Position in gene sequence: 1895

GC content: 42.9%

Sense strand siRNA: GUCCUAUUUGGAACAAGCGtt

Antisense strand siRNA: CGCUUGUUCCAAUAGGACtt

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Target sequence 111: AAGAGAAAGCAGCTTCTCGAA

Blast search (in new window)

Position in gene sequence: 2009

GC content: 42.9%

Sense strand siRNA: GAGAAAGCAGCUUCCUGAatt

Antisense strand siRNA: UUCAGGAAGCUGCUUUCUtt

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Target sequence 112: AAAGCAGCTTCTCGAAGAAA

Blast search (in new window)

Position in gene sequence: 2014

GC content: 38.1%

Sense strand siRNA: AGCAGCUUCCUGAAGAAAatt

Antisense strand siRNA: UUUUCUUCAGGAAGCUGCutt

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Target sequence 113: AAGAAAGCAGCCACTCTCTCA

Blast search (in new window)

Position in gene sequence: 2028

GC content: 47.6%

Sense strand siRNA: GAAAAGCAGCCACUCCUcatt

Antisense strand siRNA: UGAGGAGUGGUGCUUUUctt

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Target sequence 116: AAAGAGGATTACCACAGCTTG

Blast search (in new window)

Position in gene sequence: 2054

GC content: 42.9%

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Sense strand siRNA: AGAGGAUUACCACAGCUUGtt

Antisense strand siRNA: CAAGCUGUGGUAUCCUCUtt

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Target sequence 117: AAAAGGCTTAGGCAATAGAGT

[Blast search](#) (in new window)

Position in gene sequence: 2091

GC content: 38.1%

Sense strand siRNA: AAGGCUUAGGCAAUAGAGUtt

Antisense strand siRNA: ACUCUAUUUGCCUAAGCCUtt

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Target sequence 118: AAGGCTTAGGCAATAGAGT

[Blast search](#) (in new window)

Position in gene sequence: 2093

GC content: 42.9%

Sense strand siRNA: GGCUAAGGCAAUAGAGUAGtt

Antisense strand siRNA: CUACUCUAUUUGCCUAAGCCtt

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Target sequence 119: AATAGAGTAGGGCCAAAAAGC

[Blast search](#) (in new window)

Position in gene sequence: 2104

GC content: 42.9%

Sense strand siRNA: UAGAGUAGGGCCAAAAAGCtt

Antisense strand siRNA: GCUUUUUGGCCCUACUCUAtt

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Target sequence 120: AAAAAGCCTGACCTCACTCTA

[Blast search](#) (in new window)

Position in gene sequence: 2118

GC content: 42.9%

Sense strand siRNA: AAGCCUGACCUCACUCUAtt

Antisense strand siRNA: UAGAGUGAGGUCAGGCUUtt

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Target sequence 121: AAGGCTGACCTCACTCTAAC

[Blast search](#) (in new window)

Position in gene sequence: 2120

GC content: 47.6%

Sense strand siRNA: AGCCUGACCUCACUCUAACtt

Antisense strand siRNA: GUUAGAGUGAGGUCAGGCUtt

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Target sequence 122: AACTCAAAGTAATGTCCAGGT

Blast search (in new window)

Position in gene sequence: 2138

GC content: 38.1%

Sense strand siRNA: CUCAAAGUAAUGUCCAGGutt

Antisense strand siRNA: ACCUGGACAUUACUUUGAGtt

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Target sequence 123: AAGTAATGTCCAGGTTCCCA

Blast search (in new window)

Position in gene sequence: 2143

GC content: 42.9%

Sense strand siRNA: AGUAAUGUCCAGGUUCCCAtt

Antisense strand siRNA: UGGGAACCUGGACAUUACUtt

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Target sequence 124: AATGTCCAGGTTCCAGAGAA

Blast search (in new window)

Position in gene sequence: 2148

GC content: 47.6%

Sense strand siRNA: UGUCCAGGUUCCAGAGAAtt

Antisense strand siRNA: UUCUCUGGGAACCUGGACAtt

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Target sequence 125: AATATCTGCTGGTATTTTCT

Blast search (in new window)

Position in gene sequence: 2167

GC content: 28.6%

Sense strand siRNA: UAUCUGCUGGUUUUUUCUtt

Antisense strand siRNA: AGAAAAAUACCAGCAGAUAtt

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Target sequence 126: AAAGACCATTGCAAAATTGT

Blast search (in new window)

Position in gene sequence: 2190

GC content: 28.6%

Sense strand siRNA: AGACCAUUUGCAAAAUUGUtt

Antisense strand siRNA: ACAAUUUUGCAAAUGGUCUtt

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Target sequence 127: AAAATTGTAACCTAATACAA

Blast search (in new window)

Position in gene sequence: 2203

GC content: 19%

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EXHIBIT 4

Sense strand siRNA: AAUUGUAACCUAAUACAAt

Antisense strand siRNA: UUUGUAUUAGGUUACAAUtt

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Target sequence 128: AATTGTAACTAATACAAAGT

Blast search (in new window)

Position in gene sequence: 2205

GC content: 23.8%

Sense strand siRNA: UUGUAACCUAAUACAAGUtt

Antisense strand siRNA: ACUUUGUAUUAGGUUACAAt

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Target sequence 129: AACCTAATACAAAGTGTAGCC

Blast search (in new window)

Position in gene sequence: 2211

GC content: 38.1%

Sense strand siRNA: CCUAAUACAAAGUGUAGCctt

Antisense strand siRNA: GGCUACACUUUGUAUUAGGtt

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Target sequence 130: AATACAAAGTGTAGCCTTCTT

Blast search (in new window)

Position in gene sequence: 2216

GC content: 33.3%

Sense strand siRNA: UACAAAGUGUAGCCUUCUtt

Antisense strand siRNA: AAGAGGCUACACUUUGAtt

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Target sequence 131: AAAGTGTAGCCTCTTCCAAC

Blast search (in new window)

Position in gene sequence: 2221

GC content: 42.9%

Sense strand siRNA: AGUGUAGCCUUCUCCAActt

Antisense strand siRNA: GUUGGAAGAAGGCUACACUtt

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Target sequence 132: AACTCAGGTAGAACACACCTG

Blast search (in new window)

Position in gene sequence: 2239

GC content: 47.6%

Sense strand siRNA: CUCAGGUAGAACACCCUGtt

Antisense strand siRNA: CAGGUGUGUUCUACCUGAGtt

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Target sequence 133: AACACACCTGCTTTGTCTTG

Blast search (in new window)

Position in gene sequence: 2250

GC content: 42.9%

Sense strand siRNA: CACACCUGUCUUUGUCUUGtt

Antisense strand siRNA: CAAGACAAAGACAGGUGUGtt

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Target sequence 134: AACATTTCCCTAAGCCCAT

Blast search (in new window)

Position in gene sequence: 2292

GC content: 42.9%

Sense strand siRNA: CAUUUUCCCCUAAGCCCAUtt

Antisense strand siRNA: AUGGGCUUAGGGGAAAAUGtt

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Target sequence 135: AAGCCCATATGTCTAAGGAAA

Blast search (in new window)

Position in gene sequence: 2305

GC content: 38.1%

Sense strand siRNA: GCCCAUAUGUCUAAGGAAAtt

Antisense strand siRNA: UUUCCUUAGACAUUGGGCtt

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Target sequence 136: AAGGAAAGGATGCTATTGGT

Blast search (in new window)

Position in gene sequence: 2319

GC content: 38.1%

Sense strand siRNA: GGAAAGGAUGCUAUUUGGtt

Antisense strand siRNA: ACCAAAUAGCAUCCUUUCCtt

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Target sequence 137: AAAGGATGCTATTGGTAATG

Blast search (in new window)

Position in gene sequence: 2323

GC content: 33.3%

Sense strand siRNA: AGGAUGCUAUUUGGUAAGtt

Antisense strand siRNA: CAUUACCAAUAGCAUCCtt

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Target sequence 138: AATGAGGAAGCTTATTGTGA

Blast search (in new window)

Position in gene sequence: 2340

GC content: 28.6%

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EXHIBIT 4

Sense strand siRNA: UGAGGAACUGUUAUUUGUAtt

Antisense strand siRNA: UACAAUAACAGUCCUCAtt

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Position in gene sequence: 2347

GC content: 23.8%

Sense strand siRNA: CUGUUAUUUGUAUGUGAAUtt

Antisense strand siRNA: AUUCACAUACAAUAACAGtt

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